

The Examiner has rejected claims 57-155 under 35 USC §112, second paragraph and has rejected claims 82-85 as being dependant on canceled claims. Claims 57-155 are rejected under 35 USC §102 (b) over Kamentsky (USPNo. 5,427,910) or Hubbell (USPNo. 5,571,639).

Applicants thank the Examiner for participating in the interview dated April 11, 2003 in which the rejection under 35 USC §112, second paragraph was discussed. No agreement was made regarding the claims, however, the Examiner suggested some language that Applicants have inserted in an attempt to overcome this rejection.

Applicants have made some minor clarifying amendments to the claims in addition to the amendments referred to below.

DISCUSSION

Rejection Under 35 USC §102 (b)

Applicants respectfully submit that the Kamentsky and Hubbell patents are not prior art to the present claims. The present application claims priority back to an application filed December 6, 1990 through a series of continuations. For example, the priority information listed in the transmittal letter states that:

“The present application is a continuation of 09/245,212, filed February 5, 1999, which is a continuation of 09/063,933, filed April 21, 1998, which is a continuation of 08/466,632, filed June 6, 1995, which is a rule 60 division of 08/390,272, filed on February 16, 1995, which is a file wrapper continuation of 07/624,120, filed December 6, 1990, now abandoned, which is a continuation-in-part of Application No. 07/492,462, filed March 7, 1990, now U.S. Patent No. 5,143,854, which is a continuation-in-part of 07/362,901, filed June 7, 1989, now abandoned, the disclosure of which is incorporated by reference.”

Applicants can claim priority back further than the chain of continuations/divisionals that go back to Dec. 6, 1990, however that is not necessary for the present purpose. Kamentsky earliest priority date is Dec. 9, 1992 and Hubbell's is May 24, 1994. Accordingly, Applicant's chain of priority antedates the §102 (b) or §102

(e) dates of both references. Applicants hereby request that the Examiner withdraw this rejection.

Rejection Under 35 USC §112, second paragraph

Applicants have amended the claims to more particularly focus on the invention. Claims 82-85 have been amended to depend from a pending claim. Applicants hereby respectfully request reconsideration and withdrawal of this rejection.

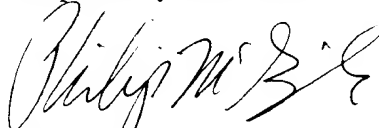
Applicants have also amended the claims to show that the software collects pixel data to generate an average intensity over a given localized area. This language is supported generally at pages 54-56, and specifically at page 56, line 25. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection.

CONCLUSION

Applicants have shown that the present claims have an effective filing date to before the dates of the references. Also, Applicants have amended the claims to address the §112 rejections.

Applicants hereby respectfully request that the Examiner reconsider and withdraw the rejections. Such action is hereby solicited.

Respectfully submitted,



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Appendix A
Mark up of claims

57 (Amended) A computer readable medium comprising computer executable instructions for performing a method for [controlling] acquiring data using an array scanner comprising:

scanning an area of a substrate having a plurality of different polymers of known sequence, wherein each type of [the] polymer[s] is on a [known location] localized area that is smaller than 250000 microns²;

receiving pixel data from the scanner; and
collecting pixel data to generate an average intensity over a given localized area [;
and]

[outputting the pixel data to an image data file].

59. (Amended) The computer readable medium of Claim 57 wherein the method further comprises outputting the pixel data to an image data file and displaying the image data.

60. (Amended) The computer readable medium of Claim 57 wherein the polymers are [oligonucleotides] nucleic acids and the substrate is hybridized with a sample.

65. (Amended) A computer software product comprising:

computer program code that scans an area of a substrate having a plurality of different polymers of known sequence, wherein each type of [the] polymer[s] is on a [known location] localized areas that is smaller than 250000 microns²;

computer program code that receives pixel data from the scanner;
computer program code that collects pixel data to generate an average intensity over a given localized area [outputs the pixel data to an image data file]; and
a computer readable medium for storing the codes.

67. (Amended) The computer software product of Claim 66 further comprising computer program code that outputs the pixel data to an image data file and displays the image data.

68. (Amended) The computer software product of Claim 65 wherein the polymers are [oligonucleotides] nucleic acids and the substrate is hybridized with a sample.

73. (Amended) A system for [controlling] acquiring data using a polymer scanner comprising:

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical steps comprising:

scanning an area of a substrate having a plurality of different polymers of known sequence, wherein each type of [the] polymer[s] is on a localized area [location] that is smaller than 250000 microns²;

receiving pixel data from the scanner; and

collecting pixel data to generate an average intensity over a given localized area [outputting the pixel data to an image data file].

75. (Amended) The system of Claim 74 wherein the logic step further comprises outputting the pixel data to an image data file and displaying the image data.

76. (Amended) The system of Claim 75 wherein the polymers are [oligonucleotides] nucleic acids and the substrate is hybridized with a sample.

78. (Amended) A computer readable medium comprising computer executable instructions for performing a method comprising:
scanning a polymer array to obtain a plurality of intensity data, wherein the polymer array has a plurality of different polymer probes of known sequence, wherein each type of [the] polymer probe[s] occupies a localized area less than 250000 microns², and wherein the array has been contacted with a sample that may contain a target; and

determining the positions of probe and target interaction based upon the intensity data and collecting pixel data to generate an average intensity over a given localized area.

81. (Amended) The computer readable medium of Claim [78] 80 wherein the intensity data reflects the hybridization of the oligonucleotide probes and the target.

82. (Amended) The computer readable medium of Claim [25] 78 wherein intensity data are florescence data.

83. (Amended) The computer readable medium of Claim [22] 78 wherein the substrate has at least 400 polymer probes per cm^2 .

84. (Amended) The computer readable medium of Claim [22] 78 wherein the substrate has at least 1000 polymer probes per cm^2 .

85. (Amended) The computer readable medium of Claim [22] 78 wherein the substrate has at least 10000 polymer probes per cm^2 .

86. (Amended) A computer software product comprising:

[C]computer program code that scans a polymer array to obtain a plurality intensity data, wherein the polymer array has a plurality of different polymer probes, of known sequence, wherein each type of [the] polymer probe[s] occupies a localized area less than 250000 microns², and wherein the array has been contacted with a sample that may contain a target;

computer program code that determines the positions of probe and target interaction based upon the intensity data and the computer program code collects pixel data to generate an average intensity over a given localized areas; and

a computer readable medium for storing the codes.

89. (Amended) The computer software product of Claim [86] 88 wherein the intensity data reflects the hybridization of the oligonucleotide probes and the target.

94. (Amended) A system for [controlling] acquiring data using a polymer scanner comprising:

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical steps comprising:

scanning a polymer array to obtain a plurality of intensity data, wherein the polymer array has a plurality of different polymer probes of known sequence, wherein each type of [the] polymer probe[s] occupies a localized area less than 250000 microns², and wherein the array has been contacted with a sample that may contain a target; and determining the positions of probe and target interaction based upon the intensity data and collecting pixel data to generate an average intensity over a given localized area.

102. (Amended) A system for scanning a polymer array comprising:

a scanning optical device;

a polymer array having different polymers of known sequence wherein each type of polymer is in a localized area [holder for holding the polymer array];

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical step comprising [moving the polymer array holder] collecting intensity data from less than 1/2 of each of the localized areas to generate an average intensity over a given localized area.

108. (Amended) A computer readable medium comprising executable instructions for acquiring data from a polymer array, comprising:

scanning a substrate having a plurality of different polymers, of known sequence, wherein each type of polymer is in a [at] localized area [known locations], [at least one known location] having an area smaller than 250,000 microns²; [and]

acquiring data which indicate binding between the polymer on the substrate and a detectable target polymer; and

collecting pixel data to generate an average intensity over a given localized area.

120. (Amended) A computer software product comprising

computer program code that scans a substrate having a plurality of different polymers, of known sequence, at localized areas [known locations], each of which have [at least one known location having] an area smaller than 250,000 microns²;

computer program code that acquires data which indicate binding between the polymer on the substrate and a detectable target polymer and collects pixel data to generate an average intensity over individual localized areas; and

a computer readable medium for storing the codes.

132. (Amended) A computer readable medium comprising executable instructions for acquiring data from a polymer array, comprising:

scanning a substrate having a plurality of different polymers of known or detectable sequence at localized areas [known locations], each of which are [at least one known location having an area] smaller than 250,000 microns²; and

acquiring data which indicate binding between the polymer on the substrate and a detectable target polymer; and

collecting pixel data to generate an average intensity over a given localized area.

144. (Amended) A system for controlling a polymer scanner comprising:
- a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical steps comprising:
 - scanning a substrate having a plurality of different polymers, of known or detectable sequence, at localized areas [known locations], each of which are [at least one known location having an area] smaller than 250,000 microns²; and
 - acquiring data which indicate binding between the polymer on the substrate and a detectable target polymer; and
 - collecting pixel data to generate an average intensity over a localized area.
156. (New) An image file produced by the computer readable medium of claim 59.
157. (New) An image file produced by the computer software product of claim 67.
158. (New) An image file produced by the system of claim 75